

## AMENDMENTS

### Amendments to the Claims

Please amend the claims as follows:

1-11. (Cancelled).

12. (Currently amended) A method for utilizing a software editor for defining, revising, and storing a data and model flow for modeling and analyzing a plurality of computing workloads, the method comprising:
- gathering an identifier for a data and model flow;
  - designating a data collection module configured to dynamically populate a measurement object in response to a polling inquiry from a modeling module, the measurement object comprising updated performance data associated with the operation of a computer system, the computer system comprising at least one physical processor and physical storage, the computer system executing a plurality of computing workloads;
  - wherein the modeling module designates a ~~plurality of models~~ workload prediction model, a performance analysis model, and an optimization model that use the updated performance data wherein the modeling module is further configured such that output data from a first model serves as input data for a second model in a hierarchy of models;
  - utilizing a metric map for defining model variables required to analyze analysis data compiled from the ~~at least one model~~ plurality of models;

utilizing a plot module for designating a data analysis module configured to present analysis data compiled from the ~~at least one model~~ plurality of models.

13. (Previously presented) The method of Claim 12, further comprising utilizing a storage module configured to store and retrieve the data and model flow from a persistent data structure.
14. (Previously presented) The method of Claim 13, wherein the persistent data structure comprises an eXtensible Markup Language (XML) file.
15. (Previously presented) The method of Claim 13, wherein the persistent data structure comprises a database.
16. (Cancelled).
17. (Cancelled).
18. (Cancelled).
19. (Cancelled).
20. (Cancelled).

21. (Currently amended) A method for implementing an application programming interface (API) for real-time modeling and analyzing of computing workloads, comprising:

utilizing a measurement software class configured to dynamically populate a measurement object in response to a polling inquiry from an instance of a run-time manager software class, the measurement object comprising updated performance data associated with the operation of a computer system, the computer system comprising at least one physical processor and physical storage, the computer system executing a plurality of computing workloads;

utilizing a workload software class that defines a data and model flow associated with the computer system, the workload software class comprising a workload prediction model software class, a performance analysis model software class, and an optimization model software class ~~two or more model software classes~~ that utilize the gathered performance data to model attributes of the computer system wherein output data from a first model serves as input data for a second model in a hierarchy of models; and wherein the run-time manager software class is configured to periodically poll for measurement objects instantiated from the measurement software class and execute one or more model objects instantiated from ~~the one or more~~ model software classes in response to the data and model flow defined by one or more workload objects.

22. (Previously presented) The method of Claim 21, further comprising utilizing a real-time interface module configured to start and stop execution of one or more workload objects.
23. (Previously presented) The method of Claim 21, wherein the interface is further configured to present analysis data compiled by a plot object instantiated from a plot class, the analysis data associated with a specific workload object identified by a user.
24. (Currently amended) A method for modeling and analyzing a plurality of computing workloads, the method comprising:
- dynamically populating a measurement object in response to a polling inquiry from a modeling module, the measurement object comprising updated performance data associated with the operation of a computer system, the computer system comprising at least one physical processor and physical storage, the computer system executing a plurality of computing workloads;
  - executing a plurality of models comprising a workload prediction model, a performance analysis model, and an optimization model that use the gathered performance data wherein the modeling module is further configured such that output data from a first model serves as input data for a second model in a hierarchy of models;
  - presenting analysis data compiled from the ~~at least one model~~ plurality of models;
  - and

providing a framework configured to manage the gathering of performance data, the execution of the ~~at least one model~~ plurality of models, and the presentation of the analysis data in response to a predefined data and model flow.

25. (Previously presented) The method of Claim 24, wherein the framework is executed from within a third-party application.

26. (Cancelled).

27. (Cancelled).

28. (Previously presented) A method for modeling and analyzing a plurality of computing workloads, the method comprising:  
specifying a data and model flow for monitoring a computer system;  
invoking a modeling and analysis utility, wherein the data and model flow defines performance data that is dynamically populated in a measurement object in response to a polling inquiry from a modeling module, the measurement object comprising updated performance data associated with the operation of a computer system, the computer system comprising at least one physical processor and physical storage, the computer system executing a plurality of computing workloads, and models that are executed periodically using the performance data to compile analysis data representative of results from one or more of the models wherein output

data from a first model serves as input data for a second model in a hierarchy of models; and  
receiving a real-time graphical representation of the analysis data from the modeling and analysis utility, in response to an event.

29. (Previously presented) The method of Claim 28, wherein the event comprises analysis data that fails to satisfy a threshold value.
30. (Previously presented) The method of Claim 28, wherein the event comprises a user request, the modeling and analysis utility presenting the graphical representation of the analysis data to a user by way of a user-defined plotting module.

31. (New) A method to model and analyze a plurality of computing workloads, the method comprising:
- specifying a data and model flow within a framework for analyzing the performance of a computer system by selecting
    - a workload prediction model configured to generate a forecasted workload, the forecasted workload configured by the framework to serve as input to a model specified in the data and model flow,
    - a performance analysis model configured to generate performance information and configured to monitor and analyze the computer system's performance based on a workload, the performance information configured by the framework to serve as input to models specified for the data and model flow, and
    - an optimization model configured to generate computer system configuration changes based on a workload, the computer system configuration changes configured by the framework to serve as input to models specified for the data and model flow for the computer system, and specifying an order in which the models are to be executed;
  - executing the selected models within the framework wherein output data from at least one of the selected models is configured by the framework to serve as input data to at least one other selected model, and wherein the selected models are executed in the order defined by the specified data and model flow; and

presenting analysis data compiled from the execution of the selected models, the framework configured to manage the gathering of performance data, the execution of the selected models, and the presentation of the of the analysis data.

32. (New) The method of Claim 31, further comprising specifying one of a predefined data collection module and a user defined data collection module that collects performance data about the computer system.
33. (New) The method of Claim 31 wherein at least one of the workload prediction model, performance analysis model, and optimization models is a user defined modeled.
34. (New) The method of Claim 31, wherein the selected workload prediction model is a time series model.
35. (New) The method of Claim 34, wherein the selected performance analysis model is a queuing system model.
36. (New) The method of Claim 35, wherein the framework is configured to make the output of the time series model compatible as an input to the queuing system model.
37. (New) The method of Claim 31, wherein specifying a data and model flow is integrated within a predefined user interface.



38. (New) The method of Claim 31, wherein specifying a data and model flow is integrated within a third-party application.
39. (New) The method of Claim 31, wherein the modeling module is further configured to execute a plurality of models in parallel.
40. (New) The method of Claim 31, further comprising implementing the predefined data and model flow at least in part by defining a workload software object from a persistent data structure, the workload software object comprising parameters for gathering performance data, executing the modeling module, and presenting analysis data.
41. (New) The method of Claim 31, further comprising utilizing an editor configured to allow a user to define and store the predefined data and model flow.